WHAT IS CLAIMED IS:

1. A high temperature oxide superconducting wire comprising:

a high temperature oxide superconductor;

a sheathing body formed of material containing silver for coating said high temperature oxide superconductor;

a high-resistant body formed of material containing heat-resistant oxide ceramics for coating said sheathing body; and

a coating body formed of material which is inactive relative to said high-resistant body in a high temperature oxidative atmosphere for coating said high-resistant body.

2. The high temperature oxide superconducting wire according to claim 1, wherein

a plurality of said sheathing bodies are provided and said high-resistant body is interposed between said plurality of sheathing bodies.

3. The high temperature oxide superconducting wire according to claim 1, wherein

said high temperature oxide superconductor is in a form of filament.

4. The high temperature oxide superconducting wire according to claim 1, wherein

said heat-resistant oxide ceramics is a ceramic material which is stable in an oxidative atmosphere of at least 800°C.

5. The high temperature oxide superconducting wire according to claim 1, wherein

said heat-resistant oxide ceramics includes at least one selected from the group consisting of $A\ell_2O_3$, MgO, CoO, Co_3O_4, SiO_2, Bi_2Sr_2CuOx and $(Sr, Ca)_2CuO_3$.

6. The high temperature oxide superconducting wire according to

claim 1, wherein

the material constituting said coating body includes at least one selected from the group consisting of silver, silver alloy, oxide-dispersed silver, stainless steel and nickel alloy.

7. The high temperature oxide superconducting wire according to claim 6, wherein

said silver alloy includes at least one selected from the group consisting of Ag-Mg alloy, Ag-Mn alloy, Ag-Au alloy, Ag-Sb alloy and Ag-Pd alloy.

8. The high temperature oxide superconducting wire according to claim 6, wherein

said oxide-dispersed silver is formed by dispersing grains of oxide including at least one selected from the group consisting of $A\ell_2O_3$, MgO, Mn_2O_3 and Li_2O in silver.

9. The high temperature oxide superconducting wire according to claim 6, wherein

said stainless steel is SUS304 (Japanese Industrial Standard) or SUS310 (Japanese Industrial Standard).

10. The high temperature oxide superconducting wire according to claim 6, wherein

said nickel alloy is Ni-Cr-Fe alloy.

11. The high temperature oxide superconducting wire according to claim 1, wherein

conductive metal is added to said heat-resistant oxide ceramics.

12. The high temperature oxide superconducting wire according to claim 11, wherein

said conductive metal includes at least one selected from the group

consisting of silver, silver alloy, gold and gold alloy.

13. The high temperature oxide superconducting wire according to claim 1, wherein

the material constituting said sheathing body includes at least one selected from the group consisting of Ag, Ag-Au alloy and Ag-Sb alloy.

14. The high temperature oxide superconducting wire according to claim 1, wherein

said high temperature oxide superconductor is Bi (Pb)-Sr-Ca-Cu-O-based high temperature superconductor.

15. The high temperature oxide superconducting wire according to claim 1, wherein

said high temperature oxide superconducting wire is a high temperature oxide superconducting current lead.

16. A method of manufacturing a high temperature oxide superconducting wire, comprising the steps of:

filling a first pipe formed of material containing silver with raw powder which becomes a high temperature oxide superconductor by a heat treatment or powder of said high temperature oxide superconductor;

placing said first pipe filled with said raw powder or said powder of the high temperature oxide superconductor in a second pipe;

filling a space between an outer surface of said first pipe and an inner surface of said second pipe with heat-resistant oxide ceramic powder, said second pipe formed of material which is inactive relative to said heat-resistant oxide ceramic powder in a high temperature oxidative atmosphere; and

applying a plastic working and a heat treatment to said second pipe filled with said heat-resistant oxide ceramic powder.

17. The method of manufacturing the high temperature oxide

superconducting wire according to claim 16, wherein

an average grain size of said heat-resistant oxide ceramic powder is equal to or less than 10 μm.

18. The method of manufacturing the high temperature oxide superconducting wire according to claim 17, wherein

the average grain size of said heat-resistant oxide ceramic powder is equal to or less than 1 μm.

19. The method of manufacturing the high temperature oxide superconducting wire according to claim 16, wherein

conductive metal is evaporated and deposited on a surface of said heat-resistant oxide ceramic powder.

20. The method of manufacturing the high temperature oxide superconducting wire according to claim 16, wherein

conductive metal powder is mixed with said heat-resistant oxide ceramic powder.

21. The method of manufacturing the high temperature oxide superconducting wire according to claim 16, wherein

said step of applying the plastic working and the heat treatment to said second pipe includes a step of applying a twisting process to said second pipe and thereafter applying a compressing process and the heat treatment to said second pipe.

22. The method of manufacturing the high temperature oxide superconducting wire according to claim 16, wherein

said step of applying the plastic working and the heat treatment to said second pipe includes a step of applying a drawing process or a twisting process to said second pipe to produce a plurality of wires, bundling said plurality of wires and applying a twining process thereto, and further applying a compressing process and the heat treatment to the wires.

23. The method of manufacturing the high temperature oxide superconducting wire according to claim 16, wherein

said step of filling said first pipe with the raw powder or the powder of the high temperature oxide superconductor includes a step of preparing a plurality of said first pipes and filling each of said plurality of first pipes with said raw powder or said powder of the high temperature oxide superconductor.

24. A method of manufacturing a high temperature oxide superconducting wire, comprising the steps of:

filling a first pipe formed of material containing silver with raw powder which becomes a high temperatures oxide superconductor by a heat treatment or powder of said high temperature oxide superconductor;

preparing a powder compact having a hole from heat-resistant oxide ceramic powder;

inserting said first pipe filled with said raw powder or said powder of the high temperature oxide superconductor into the hole of said powder compact;

placing said powder compact in which said first pipe is inserted in a second pipe, said second pipe formed of material which is inactive relative to said heat-resistant oxide ceramic powder in a high temperature oxidative atmosphere; and

applying a plastic working and a heat treatment to said second pipe in which said powder compact is placed.

25. The method of manufacturing the high temperature oxide superconducting wire according to claim 24, wherein

an average grain size of said heat-resistant oxide ceramic powder is equal to or less than 10 μm.

26. The method of manufacturing the high temperature oxide superconducting wire according to claim 25, wherein

the average grain size of said heat-resistant oxide ceramic powder is

equal to or less than 1 μm.

27. The method of manufacturing the high temperature oxide superconducting wire according to claim 24, wherein

conductive metal is evaporated and deposited on a surface of said heat-resistant oxide ceramic powder.

28. The method of manufacturing the high temperature oxide superconducting wire according to claim 24, wherein

conductive metal powder is mixed with said heat-resistant oxide ceramic powder.

29. The method of manufacturing the high temperature oxide superconducting wire according to claim 24, wherein

said step of applying the plastic working and the heat treatment to said second pipe includes a step of applying a twisting process to said second pipe and thereafter applying a compressing process and the heat treatment to the second pipe.

30. The method of manufacturing the high temperature oxide superconducting wire according to claim 24, wherein

said step of applying the plastic working and the heat treatment to said second pipe includes a step of applying a drawing process or a twisting process to said second pipe to produce a plurality of wires, bundling said plurality of wires and applying a twining process thereto, and further applying a compressing process and the heat treatment to the wires.

31. The method of manufacturing the high temperature oxide superconducting wire according to claim 24, wherein

said step of filling said first pipe with the raw powder or the powder of the high temperature oxide superconductor includes a step of preparing a plurality of said first pipes and filling each of said plurality of first pipes with said raw powder or said powder of the high temperature oxide

superconductor.

32. A method of manufacturing a high temperature oxide superconducting wire comprising the steps of:

filling a first pipe formed of material containing silver with raw powder which becomes a high temperature oxide superconductor by a heat treatment or powder of said high temperature oxide superconductor;

attaching heat-resistant oxide ceramic powder to a surface of a metal plate to produce a plate-shaped body, said metal plate formed of material which is inactive relative to said heat-resistant oxide ceramic powder in a high temperature oxidative atmosphere;

winding said plate-shaped body around said first pipe filled with said raw powder or said powder of the high temperature oxide superconductor and placing a resultant one in a second pipe, said second pipe formed of material which is inactive relative to said heat-resistant oxide ceramic powder in the high temperature oxidative atmosphere; and

applying a plastic working and a heat treatment to said second pipe in which said plate-shaped body is placed.

33. The method of manufacturing the high temperature oxide superconducting wire according to claim 32, wherein

an average grain size of said heat-resistant oxide ceramic powder is equal to or less than 10 μm.

34. The method of manufacturing the high temperature oxide superconducting wire according to claim 33, wherein

the average grain size of said heat-resistant oxide ceramic powder is equal to or less than 1 μm.

35. The method of manufacturing the high temperature oxide superconducting wire according to claim 32, wherein

conductive metal is evaporated and deposited on a surface of said heat-resistant oxide ceramic powder.

36. The method of manufacturing the high temperature oxide superconducting wire according to claim 32, wherein

conductive metal powder is mixed with said heat-resistant oxide ceramic powder.

37. The method of manufacturing the high temperature oxide superconducting wire according to claim 32, wherein

said step of applying the plastic working and the heat treatment to said second pipe includes a step of applying a twisting process to said second pipe and thereafter applying a compressing process and the heat treatment to the second pipe.

38. The method of manufacturing the high temperature oxide superconducting wire according to claim 32, wherein

said step of applying the plastic working and the heat treatment to said second pipe includes a step of applying a drawing process or a twisting process to said second pipe to produce a plurality of wires, bundling said plurality of wires and applying a twining process thereto, and further applying a compressing process and the heat treatment to the wires.

39. The method of manufacturing the high temperature oxide superconducting wire according to claim 32, wherein

said step of filling said first pipe with the raw powder or the powder of the high temperature oxide superconductor includes a step of preparing a plurality of said first pipes and filling each of said plurality of first pipes with said raw powder or said powder of the high temperature oxide superconductor.